REMARKS

Claims 1-30 were examined in a subject Office action dated September 19, 2007. In response thereto, claims 20 and 26 has been amended, claim 27 has been canceled, and claims 1-19, 22-25, and 28-30 remain pending in the subject application under active prosecution. Applicants assert that the amendments are supported by the originally filed specification and do not introduce new subject matter. Favorable reconsideration of the subject patent application is respectfully requested in view of the comments and amendments herein.

I. Rejection of Claims 26-27 Under 35 U.S.C. §101

Claims 26-27 rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 27 is canceled. Claim 26 has been amended to recite in part a computer readable media comprising at least one of the means for utilizing and the means for embedding. "'[F]unctional descriptive material' consists of data structures and computer programs which impart functionality when employed as a computer component. … When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized." (*See* MPEP §2106.01.) Withdrawal of the rejection is respectfully requested for claim 26.

II. Rejection of Claims 1-4, 10-14, 15, 24-25 and 29-30 Under 35 U.S.C. §102(b)

Claims 1-4, 10-14, 15, 24-25 and 29-30 stand rejected under 35 U.S.C. §102(b) as being anticipated by Shur (US 2001/0049788 A1). It is respectfully submitted that this rejection should be withdrawn for at least the following reasons. The cited reference of Shur fails to teach all of the claim limitations.

> For a prior art reference to anticipate, 35 U.S.C. §102 requires that "each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *In re Robertson*, 169

> F.3d 743, 745, 49 USPQ2d 1949, 1950 (Fed. Cir. 1999) (*quoting Verdegaal Bros., Inc. v. Union Oil Co.*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)).
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> "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill.'" Id. (*quoting Continental Can co. v. Monsanto Co.*, 948 F.2d 1264, 1268, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991)). "Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient." *Mehl/Biophile Int'l Corp. v. Milgraum*, 192 F.3d 1362, 1365, 52 USPQ2d 1303, 1305 (Fed. Cir. 1999), reh'g denied, 1999 U.S. App. LEXIS 31386 (Fed. Cir. Oct. 27, 1999) (*quoting In re Oelrich*, 666 F.2d 578, 581, 212 USPQ 323, 326 (CCPA 1981)).

Turning to claim 1, the claim recites a system that facilitates watermarking media, comprising a mark generator component that utilizes, at least in part, *biased, randomized statistics* to determine at least one mark value for media, and a mark embedding component that embeds the mark value into the media.

In rejecting claim 1, the Examiner relied upon Shur at paragraphs 0023, 0047-0050 for teaching "a mark generator that utilizes, at least in part biased, randomized statistics to determine at least one mark value for media". Although Shur does not use the words based on the roots "bias" nor "statistic" and the cited excerpt is rather large, Applicants understand an equivocation is being made between a unique spread spectrum code being generated by a watermark generator 130 of Shur to encrypt watermark input parametric data. However, Applicants assert that the data is determinatively retrievable unlike coding information with "biased, randomized statistics" that can be read statistically. Shur, in teaching a spread spectrum coding, requires a match in the decoding key in order to retrieve the watermark input parametric data. (*See e.g.*, para. 0054.) Consequently, Shur does not security against estimation-like cryptographic

attacks nor is robust against malicious and/or non-malicious modifications (e.g., compression, noise addition, editing, and/or compression along time, dynamic range processing attacks such as scaling, etc.).

Consequently, the cited references fail to teach or suggest the claimed limitations of claim 1. Reconsideration and allowance of claim 1 is respectfully requested, as well as for claims 2-14, 28 and 30 that depend there from.

Turning to Claim 15, the claim recites the features of claim 1 in method form and was rejected on the same basis as claim 1. Thus, for at least the same reasons, claim 15 should reconsidered and allowed over the cited references, as well as claims 16-25 and 29 that depend there from.

Turning to claim 2 that depends from claim 1, the claim recites the additional feature of the biased, randomized statistics based, at least in part, on randomly generated areas of a two-dimensional form of the media and a random entry value for each area. The Examiner rightfully noted that Shur fails to disclose "randomly generated areas of a two-dimensional form of the media." The Examiner went on to rely upon the Tirkel reference disclosed by the Applicant to teach a "two-dimensional watermark digital watermark system", citing the title, and sections4.2 and 44.

Regardless of whether claim 2 stands rejected as anticipated by Shur or Tirkel or stands rejected as unpatentable over the combination of the two, the addition of Tirkel fails to disclose all of the features of claim 2. First, Tirkel fails to disclose a *randomly generated areas*. Thus, Tirkel fails to suggest or teach a feature that further complicates efforts for malicious modifications to obliterate digital watermarks. Second, it appears that a combination of the two references would not sufficiently enable one of ordinary skill in the art to practice the claimed invention. "In addition, the reference must be enabling and describe the applicant's claimed invention sufficiently to have placed it in possession of a person of ordinary skill in the field of the invention." *In re Paulsen*, 30 F.3d 1475, 1479, 31 USPQ2d 1671, 1673 (Fed. Cir. 1994). Thus, for at least these additional reasons, reconsideration and allowance of claim 2 is respectfully requested, as well as claims3-7 that depend there from.

Turning to claim 10 that depends from claim 10, the claim recites an additional features of a mark detection component that detects the mark value utilizing, at least in

part, *statistical* correlation methods. In rejecting claim 10, the Examiner relied upon Shur at paragraphs 0055-0058. However, since Shur does not use the term "correlation", Applicants assert that to the extent that Shur inherently suggests or teaches correlation it is confined to synchronization of a spread spectrum decryption wherein being one code chip off results in Gaussian noise and being synchronized results in decryption. As such, Shur does not explicitly nor inherently teach *statistical* correlation and thus cannot address decrypting a digital watermark that has been modified. As such, the cited references fail to disclose the additional feature of claim 10. Reconsideration and allowance of claim 10 is respectfully requested, as well as claim 11 that depend there from.

Turning to claim 14 that depends from claim 1, the claim recites an additional feature of the mark value comprising a logarithmic magnitude value. In rejecting claim 14, the Examiner merely cited paragraph 0055-0058 of Shur; however, the Applicants are unable to locate an explicit or inherent teaching. Reconsideration and allowance of claim 14 is respectfully requested for this additional reason.

III. Rejection of Claims 5-7 and 26-27 Under 35 U.S.C. §103(a)

Claims 5-7 and 26-27 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Shur (US 2001/0049788 A1) in view of Atlas ("Modulation Spectral Transforms Application to Speech Separation and Modification, June 27,2003). It is respectfully submitted that this rejection should be withdrawn for at least the following reasons. The combination of Shur and Atlas fails to teach all of the claim limitations.

> "Under 35 U.S.C. 103 where the examiner has relied on the teachings of several references, the test is whether or not the references viewed individually and collectively would have suggested the claimed invention to the person possessing ordinary skill in the art. It is to be noted, however, that citing references which merely indicated that isolated elements and/or features recited in the claims are known is not a sufficient basis for concluding that the combination of claimed elements would have been obvious. That is to say, there should be something in the prior art or

> a convincing line of reasoning in the answer suggesting the desirability of combining the references in such a manner as to arrive at the claimed invention... [I]t would not have been obvious to modify [the prior art] ... without using [the patent application's] claims as a guide. It is to be noted that simplicity and hindsight are not proper criteria for resolving the issue of obviousness." Ex parte Hiyamizu, 10 USPQ2d 1393 (BPAI 1988).

As an initial comment, the cited reference of Atlas fails to correct the deficiencies of Shur in anticipating the base or intervening claims discussed above, and thus claims 5-7 and 26-27 should be allowable for the reasons given above.

Turning to claim 6, the claim recites the additional feature of the randomly generated areas comprising a plurality of randomly generated areas with a subset of overlapping areas. In rejecting claim 6, the Examiner looked to Atlas at page 5. Applicants assert that far from disclosing the claimed features, Atlas merely discloses viewing a demodulated two-dimensional image of acoustic frequency versus time shift. Areas are not disclosed for marking a media. Even just as a rendering of modulation information, Atlas does not disclose *overlapping* areas of *randomly* generated areas. Atlas merely depicts frequency areas pixels that are either adjacent or scattered, but not overlapped. The signals demodulated are not *generated*, and thus are not intentionally made random for encryption purposes, but are merely naturally occurring acoustic signals being analyzed. The mention of MDCT and MDST transform blocks being temporally aligned and combined to form a single complex transform block pertains to demodulating the signals, not to *randomly* generated areas that overlap and that bear the further limitations of the base and intervening claims as *biased, randomized statistics* for marking. Consequently, the combination of Shur and Atlas fails to disclose the claimed limitations of claim 6. Reconsideration and allowance of claim 6 is respectfully requested, as well as claim 7 that depends there from.

With further reference to claim 7, the claim recites the additional features of the mark generator component determines the mark value of overlapping areas based, at least in part, as a function of at least one selected from the group consisting of counts and signs associated with respective areas of the subset, which the Examiner merely noted was

taught by Atlas at page 5. Applicants are unable to locate any teaching in the cited reference for this claim limitation. Atlas is limited to teaching "relatively slow-varying two-dimensional representation, the "modulation spectrum" of acoustic frequency of acoustic frequency versus modulation frequency that allows removal or modification of different modulation frequencies." (Abstract). In particular, there is no teaching or suggestion for determining a mark value of the overlapping areas as a function of counts or signs. Reconsideration and allowance of claim 7 is respectfully requested for at least these additional reasons.

Turning to independent claim 26, the claim recites in part a means for utilizing, at least in part, biased, randomized statistics that employ at least one subset of random, overlapping areas with respective entry values of a two-dimensional media form to determine at least one media mark value and means for embedding the media mark value into media.

In rejecting claim 26, the Examiner characterizes Atlas as disclosing "overlapping areas with respective entry values of a two-dimensional media form (see Abstract; pages 2-4). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Shur to include the use of overlapping areas with respective entry values of a two-dimensional media form, such that the decoder can compare the marks in order to determine if a watermark exist for a user or not according to a set threshold."

Applicants assert that the teaching of Atlas is being mischaracterized. Overlapped areas that comprise a watermark are not taught. Atlas gives no teaching for looking for data areas that are overlapped. The teaching of FIG. 3 on page 4 for non-uniform modulation transform that includes temporarily aligning transform blocks pertains to the demodulation and the two panel depictions but is not enabling for determining such a watermark as claimed. Reconsideration and allowance of claim 26 is respectfully requested.

IV. Rejection of Claims 8-9 and 28 Under 35 U.S.C. §103(a)

Claims 8-9 and 28 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Shur (US 2001/0049788 A1) in view of Tucker (US 2003/0028381 A1). It is

respectfully submitted that this rejection should be withdrawn for at least the following reasons. The combination of Shur and Tucker fails to teach all of the claim limitations. As an initial comment, the cited reference of Tucker fails to correct the deficiencies of Shur in anticipating the base or intervening claims discussed above, and thus claims 8-9 and 28 should be allowable for the reasons given above.

Turning to claim 8, the claim recites the additional feature of a noise mark generator component that embeds at least one independent noise mark value over the mark value. In rejecting claim 8, the Examiner relied upon Tucker at the Abstract and at paragraphs 0013-0015, 0020, 0021, and 0070:

Applicants assert that upon close reading of these excerpts reveals no suggestion or teaching embedding at least one independent noise mark value over the mark value. While Tucker is admittedly conscious of making the watermark appear to be noise and not data, Tucker is limited to "synthetic noise signal portion which is modulated by watermark data". The synthetic noise signal portion is extracted from the signal and is not another watermark as described in the base and intervening claims of claim 8. Reconsideration and allowance of claim 8 is respectfully requested as well as for claim 9 that depends there from.

V. Rejection of Claims 16-20 and 22 Under 35 U.S.C. §103(a)

Claims 16-20 and 22 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Shur (US 2001/0049788 A1) in view of Atlas ("Modulation Spectral Transforms Application to Speech Separation and Modification, June 27,2003) further in view of Bradley (US 2002/0159614 A1). It is respectfully submitted that this rejection should be withdrawn for at least the following reasons. The combination of Shur and Atlas in further view of Bradley fails to teach all of the claim limitations. The additional cited reference of Bradley fails to correct the deficiencies of Shur in anticipating the base or intervening claims discussed above, and thus claims 16-20 and 22 should be allowable for the reasons given above.

VI. Rejection of Claim 23 Under 35 U.S.C. §103(a)

Claim 23 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Shur

(US 2001/0049788 A1) in view of Atlas ("Modulation Spectral Transforms Application to Speech Separation and Modification, June 27, 2003) in view of Bradley (US 2002/0159614 A1) further in view of Kunisa (US 2004/0101160 A1). It is respectfully submitted that this rejection should be withdrawn for at least the following reasons. The combination of Shur and Atlas in view of Bradley and in further view of Kunisa fails to teach all of the claim limitations. The additional cited reference of Kunisia fails to correct the deficiencies of Shur in anticipating the base or intervening claims discussed above, and thus claim 23 should be allowable for the reasons given above.

VII. Rejection of Claim 21 Under 35 U.S.C. §103(a)

Claim 21 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Shur (US 2001/0049788 A1) in view of White (2003/0009669 A1). It is respectfully submitted that this rejection should be withdrawn for at least the following reasons. The combination of Shur and White fails to teach all of the claim limitations. The additional cited reference of White fails to correct the deficiencies of Shur in anticipating the base or intervening claims discussed above, and thus claim 23 should be allowable for the reasons given above.

CONCLUSION

The present application is believed to be in condition for allowance in view of the above comments and amendments. A prompt action to such end is earnestly solicited.

In the event any fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063.

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact applicants' representative David Franklin at 513.774.0903 or the undersigned representative at the telephone number below.

Respectfully submitted,

AMIN, TUROCY & CALVIN, LLP

/Himanshu S. Amin/
Himanshu S. Amin
Reg. No. 40,894

AMIN, TUROCY & CALVIN, LLP
24TH Floor, National City Center
1900 E. 9TH Street
Cleveland, Ohio 44114
Telephone (216) 696-8730
Facsimile (216) 696-8731